

Міністерство освіти і науки України  
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«Київський політехнічний інститут імені Ігоря Сікорського»  
Фізико-технічний інститут

Проектування розподілених систем

Лабораторна робота 1  
«Базова архітектура мікросервісів»

Виконав:  
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Київ – 2025

# 1. POST

```
C:\Users\User>curl -X POST http://localhost:5000/messages -H "Content-Type: application/json" -d "{\"msg\": \"msg1\"}"
{
  "id": "2fd6a53b-6245-4524-938b-ac3c54619cf2",
  "status": "ok"
}
```

```
(c) Microsoft Corporation. All rights reserved.
C:\Users\User>cd Desktop\dist-sys\Task1
C:\Users\User\Desktop\dist-sys\Task1>python3 logging_server.py
Python was not found; run without arguments to install from the Microsoft Store, or disable this shield
execution aliases.
C:\Users\User\Desktop\dist-sys\Task1>python logging_server.py
[logging-service] gRPC server started on port 50051
[logging-service] Stored new message: id=2fd6a53b-6245-4524-938b-ac3c54619cf2, msg='msg1'
```

```
Command Prompt - python_messages_server.py
Microsoft Windows [Version 10.0.19045.5011]
(c) Microsoft Corporation. All rights reserved.
C:\Users\User>cd Desktop\dist-sys\Task1
C:\Users\User\Desktop\dist-sys\Task1>python messages_server.py
* Serving Flask app 'messages_server'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5002
* Running on http://192.168.0.110:5002
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 158-696-210
```

```
Command Prompt - python_facade_server.py
Microsoft Windows [Version 10.0.19045.5011]
(c) Microsoft Corporation. All rights reserved.
C:\Users\User>cd Desktop\dist-sys\Task1
C:\Users\User\Desktop\dist-sys\Task1>python facade_server.py
* Serving Flask app 'facade_server'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://192.168.0.110:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 158-696-210
127.0.0.1 - - [06/Jun/2025 13:16:27] "POST /messages HTTP/1.1" 400 -
[facade] Attempt #1 to send LogMessage(id=2fd6a53b-6245-4524-938b-ac3c54619cf2)
[facade] LogMessage success for id=2fd6a53b-6245-4524-938b-ac3c54619cf2
127.0.0.1 - - [06/Jun/2025 13:16:46] "POST /messages HTTP/1.1" 200 -
```

## 2. відключив лог сервер, POST

```
C:\Users\User\curl -X POST http://localhost:5000/messages -H "Content-Type: application/json" -d '{"msg": "\msgq()"}'
{
  "error": "Failed to send LoggingService after 3 attempts; c_InactiveRpcError of RPC that terminated with \n\tstatus = StatusCode.UNAVAILABLE\n\tmessage = '\nfailed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50001': grpc_status=14, grpc_message='No connection could be made because the target machine actively refused it.\n\n -- 1006j'\n\tdebug_error_string = '\nUNKNOWN\n\nreceived from peer { created time: '2025-06-08T10:19:14.59651735+00:00'}: grpc_status=14, grpc_message='\nfailed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50001': ConnectionRefused (No connection could be made because the Target machine actively r\n\nrefused it.\n\n -- 1006j)\n'\n}"
}
```

```
C:\Users\User>cd Desktop\dist-sys\Task1
C:\Users\User\Desktop\dist-sys\Task1>python3 logging_server.py
Python was not found; run without arguments to install from the Microsoft Store, or disable this sh
execution aliases.
C:\Users\User\Desktop\dist-sys\Task1>python logging_server.py
[logging-service] gRPC server started on port 50051
[logging-service] Stored new message: id=2fd6a53b-6245-4524-938b-ac3c54619cf2, msg='msg1'
[logging-service] Shutting down server...
C:\Users\User\Desktop\dist-sys\Task1>

C:\Users\User>cd Desktop\dist-sys\Task1
C:\Users\User\Desktop\dist-sys\Task1>python messages_server.py
* Serving Flask app 'messages_server'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5002
* Running on http://192.168.0.110:5002
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 158-696-210

C:\Users\User>cd Desktop\dist-sys\Task1
C:\Users\User\Desktop\dist-sys\Task1>python facade_server.py
* Serving Flask app 'facade_server'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://192.168.0.110:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 158-696-210
127.0.0.1 - - [06/Jun/2025 13:16:27] "POST /messages HTTP/1.1" 400 -
[facade] Attempt #1 to send LogMessage(id=2fd6a53b-6245-4524-938b-ac3c54619cf2)
[facade] LogMessage success for id=2fd6a53b-6245-4524-938b-ac3c54619cf2
127.0.0.1 - - [06/Jun/2025 13:16:46] "POST /messages HTTP/1.1" 200 -
[facade] Attempt #1 to send LogMessage(id=1076faad-29ec-438b-ac12-143f87e5f645)
[facade] gRPC attempt #1 failed: <InactiveRpcError of RPC that terminated with:
status = StatusCode.UNAVAILABLE
details = "failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:5000
-- 10061">
debug_error_string = "UNKNOWN:Error received from peer {created_time:"2025-06-06T10:19:12
nnectEx: Connection refused (No connection could be made because the target machine actively refus
>. Retrying in 1s...
[facade] Attempt #2 to send LogMessage(id=1076faad-29ec-438b-ac12-143f87e5f645)
[facade] gRPC attempt #2 failed: <InactiveRpcError of RPC that terminated with:
status = StatusCode.UNAVAILABLE
details = "failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: ConnectEx: Connection refused (No connection could be made because the target machine actively refused it.
-- 10061">
debug_error_string = "UNKNOWN:Error received from peer {grpc_message:"failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: ConnectEx: Connection refused (No connection could be made because t
he target machine actively refused it.\n\n -- 10061)", grpc_status:14, created_time:"2025-06-06T10:19:13.5799207+00:00"}"
>. Retrying in 1s...
[facade] Attempt #3 to send LogMessage(id=1076faad-29ec-438b-ac12-143f87e5f645)
[facade] gRPC attempt #3 failed: <InactiveRpcError of RPC that terminated with:
status = StatusCode.UNAVAILABLE
details = "failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: ConnectEx: Connection refused (No connection could be made because the target machine actively refused it.
-- 10061">
debug_error_string = "UNKNOWN:Error received from peer {created_time:"2025-06-06T10:19:14.5961735+00:00", grpc_status:14, grpc_message:"failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: Co
nnectEx: Connection refused (No connection could be made because the target machine actively refused it.\n\n -- 10061)"}"
>. Retrying in 1s...
127.0.0.1 - - [06/Jun/2025 13:19:15] "POST /messages HTTP/1.1" 502 -
```

### 3. включив назад лог сервер, POST

```
C:\Users\User>curl -X POST http://localhost:5000/messages -H "Content-Type: application/json" -d "{\"msg\": \"msg3\"}"
{
  "id": "f53e9fdb-08f7-45b4-a4fc-519d2f284db3",
  "status": "ok"
}
```

```
Command Prompt - python: logging_server.py
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>cd Desktop\dist-sys\Task1

C:\Users\User\Desktop\dist-sys\Task1>python3 logging_server.py
Python was not found; run without arguments to install from the Microsoft Store, or disable this shield
execution aliases.

C:\Users\User\Desktop\dist-sys\Task1>python logging_server.py
[logging-service] gRPC server started on port 50051
[logging-service] Stored new message: id=2fd6a53b-6245-4524-938b-ac3c54619cf2, msg='msg1'
[logging-service] Shutting down server...

C:\Users\User\Desktop\dist-sys\Task1>python logging_server.py
[logging-service] gRPC server started on port 50051
[logging-service] Stored new message: id=f53e9fdb-08f7-45b4-a4fc-519d2f284db3, msg='msg3'

Command Prompt - python: messages_server.py
Microsoft Windows [Version 10.0.19045.5011]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>cd Desktop\dist-sys\Task1

C:\Users\User\Desktop\dist-sys\Task1>python messages_server.py
* Serving Flask app 'messages_server'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5002
* Running on http://192.168.0.110:5002
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 158-696-210

* Restarting with stat
* Debugger is active!
* Debugger PIN: 158-696-210
127.0.0.1 - - [06/Jun/2025 13:16:27] "POST /messages HTTP/1.1" 400 -
[facade] Attempt #1 to send LogMessage(id=2fd6a53b-6245-4524-938b-ac3c54619cf2)
[facade] LogMessage success for id=2fd6a53b-6245-4524-938b-ac3c54619cf2
127.0.0.1 - - [06/Jun/2025 13:16:46] "POST /messages HTTP/1.1" 200 -
[facade] Attempt #1 to send LogMessage(id=1076faad-29ec-438b-ac12-143f87e5f645)
[facade] gRPC attempt #1 failed: <InactiveRpcError of RPC that terminated with:
  status = StatusCode.UNAVAILABLE
  details = "failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:5000"
-- 10061"
debug_error_string = "UNKNOWN:Error received from peer (created_time:"2025-06-06T10:19:12
connectEx: Connection refused (No connection could be made because the target machine actively refus
>. Retrying in 1s...
[facade] Attempt #2 to send LogMessage(id=1076faad-29ec-438b-ac12-143f87e5f645)
[facade] gRPC attempt #2 failed: <InactiveRpcError of RPC that terminated with:
  status = StatusCode.UNAVAILABLE
  details = "failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: ConnectEx: Connection refused (No connection could be made because the target machine actively refused it.
-- 10061"
debug_error_string = "UNKNOWN:Error received from peer (grpc_message:"failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: ConnectEx: Connection refused (No connection could be made because t
he target machine actively refused it.\r\n -- 10061)", grpc_status:14, created_time:"2025-06-06T10:19:13.5799207+00:00")"
>. Retrying in 1s...
[facade] Attempt #3 to send LogMessage(id=1076faad-29ec-438b-ac12-143f87e5f645)
[facade] gRPC attempt #3 failed: <InactiveRpcError of RPC that terminated with:
  status = StatusCode.UNAVAILABLE
  details = "failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: ConnectEx: Connection refused (No connection could be made because the target machine actively refused it.
-- 10061"
debug_error_string = "UNKNOWN:Error received from peer (created_time:"2025-06-06T10:19:14.5961735+00:00", grpc_status:14, grpc_message:"failed to connect to all addresses; last error: UNAVAILABLE: ipv4:127.0.0.1:50051: Co
nnectEx: Connection refused (No connection could be made because the target machine actively refused it.\r\n -- 10061)")"
>. Retrying in 1s...
127.0.0.1 - - [06/Jun/2025 13:19:15] "POST /messages HTTP/1.1" 502 -
[facade] Attempt #1 to send LogMessage(id=f53e9fdb-08f7-45b4-a4fc-519d2f284db3)
[facade] LogMessage success for id=f53e9fdb-08f7-45b4-a4fc-519d2f284db3
127.0.0.1 - - [06/Jun/2025 13:20:16] "POST /messages HTTP/1.1" 200 -
```

### 4. GET

```
C:\Users\User>curl http://localhost:5000/messages
msg3 | not implemented yet
```

отримали тільки останнє повідомлення, тому що до цього вимикали лог сервер, і всі повідомлення втрачено

перезапустив сервер, додав нові повідомлення

```
C:\Users\User>curl http://localhost:5000/messages
not implemented yet
C:\Users\User>curl -X POST http://localhost:5000/messages -H "Content-Type: application/json" -d '{"msg\": \"msg1\"}'
{
  "id": "3fbc0aac-c382-4fb8-844e-03bc9749f22d",
  "status": "ok"
}
C:\Users\User>curl -X POST http://localhost:5000/messages -H "Content-Type: application/json" -d '{"msg\": \"msg2\"}'
{
  "id": "c491a269-6922-4342-a1dd-c12c0c41be7d",
  "status": "ok"
}
C:\Users\User>curl -X POST http://localhost:5000/messages -H "Content-Type: application/json" -d '{"msg\": \"msg2\"}'
{
  "id": "752aead0-9da5-4b17-a3a1-4bf91b380537",
  "status": "ok"
}
C:\Users\User>curl http://localhost:5000/messages
msg1, msg2, msg2 | not implemented yet
```

тут ми бачимо що msg2 зберігся 2 рази, оскільки я його відправив 2 рази, перевірка на унікальність відбувається через id